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United States
Environmental Protection
Agency

Region 10
Washington Operations Office
c/o Washington Department of Ecology, PV-11
Olympia WA 98504

Washington

EPA

September 11, 1990

WOO

Duane Borduck
TOSCO Corporation Avon Refinery
Martinez, CA 94553

Dear Mr. Borduck:

As we have previously discussed on the phone, EPA has decided to list the North Market Street Site on the National Priorities List. EPA has carefully considered the comments you, or others on your behalf, submitted concerning the proposal to add your facility to the National Priorities List. Attached for your information, is EPA's response to those comments.

If you should have any questions you can call me at (206) 753-9014.

Sincerely,

Robert E Kievit

Robert E. Kievit
Hazardous Waste Coordinator
Washington Operations Office

Attachment

cc: David Bennett, Region 10
Ed Fisher - Ecology/ERO - w/attachment

10.10 NORTH MARKET STREET, (ONCE LISTED AS TOSCO CORP. (SPOKANE TERMINAL)) SPOKANE, WASHINGTON

10.10.1 List of Commenters

NPL-U7-3-245-R10 Correspondence dated 8/22/88 from Ralph H. Palumbo and R. Paul Beveridge of Heller, Ehrman, White and McAuliffe on behalf of Tosco Corp.

NPL-U7-3-242-R10 Correspondence dated 8/19/88 from Richard D. McWilliams and J. Christopher Lynch of Paine, Hamblen, Coffin Brooke and Miller on behalf of Phillips Petroleum.

10.10.2 Summary of Comments and Response

Ralph H. Palumbo, on behalf of Tosco Corp., questioned the basis for scoring toxicity/persistence, hazardous waste quantity, depth to aquifer of concern, and net precipitation. He also believes the name of the site should be North Market Street Site, not Tosco Corp. (Spokane Terminal). Finally, Mr. Palumbo concluded that the site should be exempt from CERCLA under the petroleum exclusion.

Richard D. McWilliams and J. Christopher Lynch, on behalf of Phillips Petroleum, questioned the accuracy and representativeness of the depth to aquifer of concern. They objected to the scoring of the distance to the population served, and by reference incorporated Mr. Palumbo's comments.

10.10.2.1 Depth to Aquifer of Concern

Mr. Palumbo stated that "EPA used a conservative value of 0 feet for the depth of the hazardous substances. Tosco and its technical consultants agree with EPA that contamination at the site is confined to the near surface area of the site." Further, the commenter stated that the "depth from the ground surface to the highest seasonal water table is reported in the HRS worksheets as 147 feet. Reference 19 of the HRS scoring package consists of handwritten field logs for boring B-2 which

note a depth to ground water in the borehole of 147 feet on April 22, 1987. Since this particular boring was not completed as a monitoring well, the single water level reading should not be considered a static water level until a number of measurements are taken on a periodic basis to demonstrate that water levels have stabilized in the borehole."

Mr. Palumbo provided data from a 1988 report of Golder Associates which, in his opinion, "provides more reliable water level measurements from monitoring wells installed in June, 1987." Based on these data, the commenter stated that monitoring wells NM-1, NM-3, NM-4, and NM-5, "located on or immediately adjacent to the Tosco property," exhibited adjusted depths to ground water ranging from 149.91 to 159.52 feet.

The commenter concluded that based on these data, the HRS score should be revised to reflect a depth of over 150 feet to the aquifer, changing the factor value from 1 to 0.

Commenting on the same subject, Mr. McWilliams stated that the depth to ground water is critical and that "the Golder Bore Hole logs [Reference 19] are inconclusive data of this crucial rating factor. The distance indicated in the logs is very close to 150 feet, at which point the assigned value for this route characteristic would be 0. This refined value alone would remove the North Market Street site from NPL candidacy."

Mr. McWilliams further stated that Reference 13 in the HRS documentation record at the time of proposal "indicates ground water levels at 'depths of 150 to 170 feet' below the ground. Further, it acknowledges the water table gradients under the site." The commenter believes that EPA's conclusion, "in light of its reliance on data not intended primarily to measure the depth to the aquifer, and its crucial closeness to the value which would remove the site from NPL nomination, deserves a second look."

In response, EPA has re-examined the available information concerning the depth to aquifer and concludes that the depth from the hazardous substance to the water table is less than 150 feet.

First, with regard to the commenter's data on depth to water table, the Agency does not agree that they are necessarily more representative of water table conditions than the water level of 147 feet below land surface (bls) measured in 1986 (Reference 19). Section 3.3 of the HRS Users Manual (47 FR 31224, July 16, 1982) states "Depth to aquifer of concern is measured vertically from the lowest point of the hazardous substances to the highest seasonal level of the saturated zone of the aquifer of concern." (emphasis added). The log for borehole B-2 (Reference 19), in which the water level was measured at 147 feet bls, stated "black staining of soil 140-141 [feet] bls-looks like staining from water table" followed by notes below 140 feet saying "moist." The 1988 Golder report cited by the commenter (portions of which have been added as Reference 27 to the HRS documentation record at the time of promulgation) reported a water level in June 1987 of 148.5 feet bls in well NM-4 (which is approximately 100 feet from boring B-2) and 149.91 feet bls in July 1987. The Agency notes that these levels were recorded when one would expect seasonal lows due to decreased rainfall and increased evaporation. Thus, during at least three different sampling events, the water level was measured at less than 150 feet bls in wells and borings in or adjacent to the waste pond area.

Secondly, the depth of 0 bls feet stated in the HRS documentation record for the depth of the deposited waste is significantly conservative for a number of reasons. Reference 21 provides field notes associated with numerous test pits throughout the Tosco property. For example, TP-1, TP-8, TP-17, and TP-18 (all in the lagoon area) contained soils observed to be saturated with petroleum products to a maximum depth of 10.5 feet. Reference 14 reported that a sewage drain field on-site was "saturated with oil with occasional pools and surface eruptions of soft tar," indicating that waste material was located below the surface. This same report states that there is "oil contaminated soil over 40-year period covering 1-2 sq. mi. There is lagooning of

leachate in lowlands and tar eruptions over 1-2 acre area . . . . Soil may be contaminated as much as 40 feet."

As further evidence, notes on boring B-2, drilled at the TP-8 location in April 1987, indicated traces of tar to at least a depth of about 19 feet (Reference 19). A soil sample taken at this depth in the same boring showed naphthalene, anthracene, fluoranthene, and pyrene (Reference 27).

Finally, a water sample taken (after the site was proposed) from NM-4 (100 feet from B-2 and screened at 143.5-158.5 feet bls) contained several contaminants, including naphthalene, 2-methylnaphthalene, acenaphthene, fluorene, and phenanthrene (Reference 27). This further suggests that contaminants from the lagoons may have already migrated from the original point of disposal, and that EPA's conclusion on the depth from the hazardous wastes to the aquifer of concern is conservative and reasonable.

In summary, there is sufficient evidence that the distance from the lowest point of the hazardous substances to the water table is less than 150 feet bls and the score remains unchanged for the depth to aquifer of concern factor.

10.10.2.2 Waste Characteristics--Toxicity/Persistence

Mr. Palumbo stated that "the inclusion of chromium as an evaluated parameter is inappropriate for scoring purposes. Of the samples analyzed and reported by Golder Associates (Reference 21), chromium values ranged from 0.1 to 12 mg/kg. Lead concentrations in the same samples ranged from 11 to 365 mg/kg. The relatively narrow range of chromium concentrations compared to lead suggests that the observed chromium represents background concentrations in the soil. Moreover, Bohn (1985) reports typical chromium concentration in soils at 20 mg/kg with a range of 5 to 1000 mg/kg. Thus, existing data indicate that chromium concentrations do not appear to be elevated on-site, despite its suggested presence as a contaminant through identification of K049 waste on Tosco's 103(c) notification. HRS Reference 15."

In response, the Agency agrees that chromium concentrations in the site soil samples are within the background range and are not elevated, as lead levels are. However, the evaluation of toxicity/persistence for chromium was, as noted by Mr. Palumbo, based on Tosco's notification to EPA in 1981 under CERCLA Section 103(c) that "[i]t is assumed that slop oil emulsion solids [K049 wastes] were at times disposed of at the waste oil dump facility at the site." (Reference 15). Slop oil emulsion solids typically contain both chromium and lead, and are RCRA listed wastes because of these contaminants. The commenter has not rescinded the Section 103(c) statement, and EPA believes it is appropriate to list the chromium and lead associated with this waste under toxicity/persistence in the HRS record. The Agency also notes that the presence of lead in soil samples at the site would result in a toxicity/persistence value of 18, as originally scored (Reference 21) even if chromium were not included in the toxicity/persistence. No change results from this comment.

10.10.2.3 Hazardous Waste Quantity

Mr. Palumbo stated that "because Tosco never operated the refinery, Tosco could only guess what wastes were disposed of on-site and make a good faith estimate of total waste quantity for the 103(c) notification" in which Tosco stated "[it] is assumed that slop oil emulsion solids were at times disposed . . . [and] it is probable that leaded tank bottoms were at times disposed of in holes dug in the terminal property." He explained that "the figure of 5,600 cubic feet does not represent an actual amount of waste sent to the oil lagoon, but is rather Tosco's rough estimate of the capacity of the portion of the lagoon on Tosco property. Similarly, Tosco does not know for certain that leaded tank bottoms were disposed of on the property . . . . Tosco has never found evidence of the disposal of leaded tank bottoms on the property and 'quantities are assumed to be small and inconsequential.'" Mr. Palumbo suggested that according to the HRS Users Manual, "when there is no data for a factor, it should be assigned a value of zero."

Mr. Palumbo further argued that 5,600 cubic feet is only an estimate of the total capacity of the portion of the waste oil lagoon on Tosco property and "[a]ny RCRA waste that is assumed to have been deposited in the lagoon would be present in a much smaller quantity." The commenter submitted a table published by EPA showing the content of waste streams from oil refineries; he contended that "the typical waste stream containing slop oil emulsion solids is 40 percent water. Of the remaining 60%, 22.5% is oil and only 37.5% is slop oil emulsion solids. Thus, the 5,600 cubic foot lagoon on Tosco's property could contain a maximum of only 2,100 cubic feet of RCRA listed slop oil emulsion solids . . . . [further that] in reality, the figure should be much lower because other, non-RCRA, wastes were deposited in the lagoon . . . . Using the maximum figure of 2,100 cubic feet for hazardous waste quantity (i.e., 78 cubic yards) would result in an HRS score of 3 for this factor, reducing the total score (S_m) for the facility from 32.61 to 31.13."

In response, EPA has reviewed the HRS documentation record and believes that the 5,600 cubic feet stated by Tosco on the CERCLA Section 103(c) notification, while only an estimate, certainly represents a conservative estimate of the total amount of hazardous wastes deposited at the site. The Agency's reasons are presented below.

As Mr. Palumbo indicated later in his comment ("Tosco estimates that only one-tenth of the oil lagoon is actually located on Tosco property") and as suggested by historical aerial photographs and other information on the existence of lagoons in this area (Reference 3, p. 31 and Figure 7.1), the areal extent of the lagoons (although not known exactly) was significantly greater than the 0.03 acre (1,307 square feet) estimated in Tosco's 103(c) notification for the portion within their property. Further, Reference 3, page 3 states "Tosco Corporation moved approximately 8,000 cubic yards of soil from the southeasternmost corner of its property to backfill exposed oil lagoons located in the northwesternmost corner of its property." Even if some portion of this

volume represents soil added above the original ground level, the volume of 8,000 cubic yards suggests that the 5,600 cubic feet (311 cubic yards) is a significantly conservative estimate even for that portion of the lagoons on Tosco property, much less the continuation of the lagoon onto the adjacent property. Nor has the commenter provided any data to suggest otherwise. Therefore a waste quantity factor value of 4 remains unchanged as a result of this comment.

With respect to the percentage distribution of hazardous substances within the slop oil emulsion solids and the claim that non-RCRA wastes were also deposited, Section 3.5 of the HRS Users Manual (47 FR 31229, July 16, 1982) directs that hazardous waste quantity be evaluated "as received"; it does not attempt to evaluate the quantity of soil or water that becomes contaminated after deposition. The Agency also considered the option of attempting to calculate the portion of the total substances deposited at a site that consist of hazardous constituents, but rejected that option as expensive and difficult to apply equitably to all sites when responding to public comments on the proposed HRS on July 16, 1982 (47 FR 31190) and again on September 8, 1983 (48 FR 40664). EPA recognizes that most hazardous waste contains some fraction of nonhazardous substances, and took this fact into account when it established the rating scales for waste quantity.

In summary, while EPA recognizes that there is some uncertainty regarding the exact quantity hazardous waste deposited in the lagoons at the site, this uncertainty is not uncommon at the site screening stage of NPL listing and EPA believes there is sufficient evidence to support its estimate, despite the commenter's claim.

Although the total volume of the original lagoons on both Tosco property and adjacent property is not known, EPA emphasizes that the 5,600 cubic reported on Tosco's 103(c) (which Tosco described as a good faith estimate) represents a significantly conservative estimate for the reasons presented above. Finally, the Agency notes that, as discussed in a subsequent section, "Site Name and Description," the site is being

renamed "North Market Street," since the release is also located in areas outside the Tosco property, where similar wastes were deposited.

10.10.2.4 Petroleum Exclusion

Mr. Palumbo stated that "there is no direct evidence that RCRA wastes were disposed of at the North Market Street site. In fact, there is no evidence that any substances other than petroleum products were disposed of on-site. Elevated lead concentrations on-site could logically result from leaded gasoline releases. Thus, the site should be exempt from CERCLA coverage under 42 USC Section 9601(14) which excludes petroleum products from the definition of hazardous substances."

In response, the commenter has speculated that the contamination could have resulted from leaded gasoline. However, he provided no data to support his speculation. There has been no evidence of any leaded gasoline spill or leak, nor has the commenter provided any. On the other hand, available evidence supports EPA's conclusion that the wastes are K049 RCRA listed wastes, and in accordance with CERCLA Section 101(14) are not subject to the petroleum exclusion. The basis for EPA's conclusion are as follows: 1) As discussed above under "Waste Quantity," the commenter has stated that based on Tosco's knowledge of historic refinery practices in general, Tosco "assumed that slop oil emulsion solids were at times disposed of at the waste oil dump facility at the site." Nor has the commenter specifically refuted the information on the 103(c) notification, other than to speculate that the wastes may not have been deposited at the site. 2) In support of the assumption that K049 wastes were deposited, Reference 13 specifically states that the tarpool consists of "an oily waste pond where refinery waste (slop oil emulsion) . . . was disposed of in the past." 3) Slop oil emulsion waste is a RCRA listed waste because of the relatively high levels of lead it contains. Since this waste is considered to be at the site, and elevated levels of lead have also been detected at the site,

it is reasonable to assume the lead came from the slop oil emulsion wastes.

10.10.2.5 Net Precipitation

Mr. Palumbo stated that "the reference material used by EPA to predict the amount of seasonal precipitation at the Tosco site was compiled from the Climatic Atlas of the United States using data prepared by the National Oceanic and Atmospheric Administration between 1931 and 1951. These values overestimate the mean total precipitation during the referenced season (November 1 through April 30) by approximately 3/4 of an inch." Mr. Palumbo suggested using precipitation data from the Spokane Weather Service for that seasonal period. These data were collected 10 miles northeast of the site, and, in the commenter's opinion, the site is "well represented by this station." The average measured precipitation for this period (1951-1980) was 11.48 inches. This figure, "minus 6.83 inches [6.84 in the HRS record] evaporation, equaling 4.64 inches . . . [lowers] the groundwater route score (S_{gw}) to 50.77 and the composite score (S_m) to 29.35, assuming all other factors remain unchanged."

In response, because of the need to develop a nationally uniform scoring system that can be used to score a large number of sites with data commonly available, Figures 4 and 5 of the HRS Users Manual (47 FR 31224, 31227-31228, July 16, 1982) require that net precipitation values be obtained from contour maps included in the manual unless net seasonal rainfall (seasonal rainfall minus seasonal evaporation) is available. EPA used the contour maps for determining the net precipitation value in this area.

Site-specific data, like that submitted by the commenter for annual precipitation, should be used only if available for both precipitation and lake evaporation, since both are required for a calculation of "net" precipitation. Because collection methods and frequency vary with different sources, an accurate comparison of precipitation and evaporation data is only possible if the source for both sets of data is

the same, and if the period of time is the same or significantly overlapping. The commenter proposed using precipitation data from 1951 and 1980 from the Spokane station and evaporation data from the contour maps referenced in the HRS Users Manual and derived from data collected between 1946-1955. The Agency investigated and determined that evaporation data are not collected or reported for the Spokane station. In addition, the commenter is comparing data for significantly different time periods. As a result, it is inappropriate to calculate net precipitation using the commenter's precipitation data, and thus no change in score is required.

10.10.2.6 Population Served

Mr. McWilliams questioned the score assigned to population served by the aquifer of concern. The commenter stated that "although there are 200,000 people within three miles who use the aquifer of concern, perhaps less than 10,000 use the aquifer after any alleged contaminants may have been added to the water. The gradient of the water table is noted in Reference 16 in the HRS documentation record at the time of proposal." The commenter further noted that "the objective of the HRS is to review and score migration. The value for population concerned should correspond with the population at risk, not a sum of those at risk and those up-gradient from the site."

In response, the HRS does not specifically take into account information of such level of detail as ground water flow gradients in order to determine target populations under the HRS. In responding to public comments on the proposed HRS (47 FR 31190, July 16, 1982), EPA explained that it is generally not practicable to determine the extent of population actually exposed or threatened by using ground water flow information. In many instances, the information is not available, and in others the flow direction varies over time. Even where there is extensive knowledge of geohydrology, interpretation is nearly always subject to dispute. Requiring a precise measure of the affected population would add inordinately to the time and expense of applying

the HRS. Further, EPA, in proposing the HRS model, made the determination not to use ground water flow information even in cases where some such information is available, because of the need to develop a nationally uniform scoring system that could be used to score a large number of sites with commonly available data.

10.10.2.7 Site Name and Description

Mr. Palumbo stated that the name of the site as proposed, "Tosco Corp. (Spokane Terminal)," is misleading and inaccurate. "The site has long been referred to by area property owners, the public, and the Washington State Department of Ecology (Ecology) as the 'North Market Street Site.' The site has been called the North Market Street site throughout a lengthy and ongoing remedial investigation overseen by Ecology. Recently the site was referred to as the North Market Street Site in documents generated by Ecology pursuant to the Washington State Hazardous Waste Cleanup Act. Presumably, Ecology will continue to play an active, if not lead agency, role in addressing the site in the future. The public should have confidence that both EPA and Ecology are addressing the same site and that potential contamination is limited to one area. Changing the name of the site at this time will generate needless confusion."

Mr. Palumbo continued by stating, "more importantly, the reference 'Tosco Corp. (Spokane Terminal)' does not accurately describe the physical boundaries of the site or the geographic location of contaminated areas. The old waste oil lagoon cited by EPA, and forming the primary basis for listing the site, is located only partially on Tosco property. Most of the oil lagoon and contaminated soils are located on property to the north, including the adjoining Draper Tractor property and up the Burlington Northern railroad tracks. Tosco estimates that only one-tenth of the oil lagoon is actually located on Tosco property."

Mr. Palumbo argued that "defining the site as Tosco's property also ignores other parties in the area who may be potentially responsible for

any perceived problems at the site." He cited several facilities in the area, all of which involved petroleum-related activities. He concluded that "defining the site as the Tosco property may arbitrarily limit the scope of investigation of the site and will not encourage other potentially responsible parties to take an active role in investigation of potential problems at the site."

In a related comment, Mr. Palumbo stated that "placing the stigma of a Superfund designation on an innocent landowner such as Tosco is patently unfair. While the name of a Superfund site may have no formal, legal consequence, the designation cannot be expected to foster Tosco's business position or reputation in the community. Tosco never operated the refinery nor placed RCRA wastes in the oil lagoons. Furthermore, contrary to EPA's assertion on the cover sheet to the HRS package, the refinery was moved prior to Tosco's acquisition of the property. Tosco has conducted only terminalling operations at the facility in above-ground petroleum storage tanks."

The commenter requested that the site continue to be named the "North Market Street Site" and be defined as an area encompassing all areas of concern and potentially responsible property owners.

In response, because Tosco Corp. appears not to be the primary source of problems at the site, and because the Agency agrees that the site has been generally known as "North Market Street" both to State officials and local residents, the site is being listed as such. EPA notes that the site consists of any areas where the contamination has come to be located. EPA currently identifies the release as the lagoon. The site may be expanded to include contaminated areas unknown at this time, based on further study during the RI/FS.

10.10.3 Conclusion

The original migration score for this facility was 32.61. Based on the above response to comments, the score remains unchanged. The final HRS scores for North Market Street are:

Ground Water	56.41
Surface Water	0.00
Air	0.00
Total	32.61